

# Chemical Compatibility Reference Chart

## Acetal

Acetal (Polyoxymethylene) Chemical Compatibility Chart: Check the chemical compatibility of Acetal and Delrin® with various chemicals, solvents, alcohols and other products.

Chemical	Compatibility
Acetaldehyde	A-Excellent
Acetamide	A-Excellent
Acetic Acid	D-Severe Effect
Acetic Acid 20%	C-Fair
Acetic Acid 80%	D-Severe Effect
Acetic Acid, Glacial	D-Severe Effect
Acetic Anhydride	D-Severe Effect
Acetone	A-Excellent
Acetyl Chloride (dry)	D-Severe Effect
Acetylene	A-Excellent
Alcohols: Amyl	A-Excellent
Alcohols: Benzyl	A-Excellent
Alcohols: Butyl	A-Excellent
Alcohols: Diacetone	A-Excellent
Alcohols: Ethyl	A <sup>1</sup> -Excellent
Alcohols: Hexyl	A-Excellent
Alcohols: Isobutyl	A-Excellent
Alcohols: Isopropyl	A-Excellent
Alcohols: Methyl	A-Excellent
Alcohols: Octyl	A-Excellent
Alcohols: Propyl	A-Excellent
Aluminum Chloride 20%	C-Fair
Aluminum Fluoride	C-Fair
Aluminum Hydroxide	A-Excellent
Aluminum Nitrate	B <sup>1</sup> -Good
Aluminum Potassium Sulfate 10%	C-Fair
Aluminum Potassium Sulfate 100%	C-Fair
Aluminum Sulfate	B <sup>1</sup> -Good
Amines	D-Severe Effect
Ammonia 10%	D-Severe Effect
Ammonia Nitrate	C-Fair
Ammonia, anhydrous	D-Severe Effect
Ammonia, liquid	D-Severe Effect
Ammonium Bifluoride	D-Severe Effect

Ammonium Carbonate	D-Severe Effect
Ammonium Caseinate	D-Severe Effect
Ammonium Chloride	B-Good
Ammonium Hydroxide	C-Fair
Ammonium Nitrate	A <sup>2</sup> -Excellent
Ammonium Oxalate	B-Good
Ammonium Persulfate	D-Severe Effect
Ammonium Phosphate, Dibasic	B <sup>2</sup> -Good
Ammonium Phosphate, Monobasic	B-Good
Ammonium Phosphate, Tribasic	B-Good
Ammonium Sulfate	B <sup>1</sup> -Good
Ammonium Sulfite	D-Severe Effect
Ammonium Thiosulfate	B-Good
Amyl Acetate	B <sup>1</sup> -Good
Amyl Alcohol	A-Excellent
Amyl Chloride	A-Excellent
Aniline	A <sup>1</sup> -Excellent
Antifreeze	D-Severe Effect
Aqua Regia (80% HCl, 20% HNO <sub>3</sub> )	D-Severe Effect
Aromatic Hydrocarbons	A-Excellent
Arsenic Acid	D-Severe Effect
Asphalt	B <sup>2</sup> -Good
Barium Carbonate	A-Excellent
Barium Chloride	A-Excellent
Barium Cyanide	B-Good
Barium Hydroxide	D-Severe Effect
Barium Nitrate	B <sup>2</sup> -Good
Barium Sulfate	B <sup>2</sup> -Good
Barium Sulfide	A-Excellent
Beer	A <sup>1</sup> -Excellent
Beet Sugar Liquids	B-Good
Benzaldehyde	A-Excellent
Benzene	A <sup>1</sup> -Excellent
Benzoic Acid	B-Good
Benzol	A-Excellent
Benzyl Chloride	A-Excellent
Borax (Sodium Borate)	B-Good
Boric Acid	A-Excellent
Brewery Slop	B-Good
Bromine	D-Severe Effect
Butadiene	A-Excellent

Butane	A-Excellent
Butanol (Butyl Alcohol)	A-Excellent
Butter	A-Excellent
Buttermilk	A-Excellent
Butyl Amine	C <sup>1</sup> -Fair
Butyl Ether	D-Severe Effect
Butylacetate	A-Excellent
Butylene	A-Excellent
Butyric Acid	A-Excellent
Calcium Bisulfide	D-Severe Effect
Calcium Bisulfite	D-Severe Effect
Calcium Carbonate	A-Excellent
Calcium Chlorate	A-Excellent
Calcium Chloride	D-Severe Effect
Calcium Hydroxide	D-Severe Effect
Calcium Hypochlorite	D-Severe Effect
Calcium Nitrate	D-Severe Effect
Calcium Oxide	A-Excellent
Calcium Sulfate	D-Severe Effect
Calgon	A-Excellent
Cane Juice	A-Excellent
Carbolic Acid (Phenol)	D-Severe Effect
Carbon Bisulfide	A-Excellent
Carbon Dioxide (dry)	A-Excellent
Carbon Dioxide (wet)	A-Excellent
Carbon Disulfide	A <sup>1</sup> -Excellent
Carbon Monoxide	A-Excellent
Carbon Tetrachloride	B <sup>1</sup> -Good
Carbon Tetrachloride (wet)	A <sup>1</sup> -Excellent
Carbonated Water	A-Excellent
Carbonic Acid	B <sup>1</sup> -Good
Catsup	B-Good
Chloric Acid	D-Severe Effect
Chlorinated Glue	D-Severe Effect
Chlorine (dry)	D-Severe Effect
Chlorine Water	D-Severe Effect
Chlorine, Anhydrous Liquid	A <sup>1</sup> -Excellent
Chloroacetic Acid	D-Severe Effect
Chlorobenzene (Mono)	D-Severe Effect
Chloroform	A-Excellent
Chlorosulfonic Acid	D-Severe Effect

Chocolate Syrup	A-Excellent
Chromic Acid 10%	D-Severe Effect
Chromic Acid 30%	D-Severe Effect
Chromic Acid 5%	D-Severe Effect
Chromic Acid 50%	D-Severe Effect
Cider	A-Excellent
Citric Acid	B <sup>1</sup> -Good
Citric Oils	B-Good
Cloroxr (Bleach)	D-Severe Effect
Coffee	A-Excellent
Copper Chloride	A-Excellent
Copper Cyanide	A-Excellent
Copper Fluoborate	B-Good
Copper Nitrate	A-Excellent
Copper Sulfate>5%	D-Severe Effect
Copper Sulfate 5%	D-Severe Effect
Cream	A-Excellent
Cresols	D-Severe Effect
Cresylic Acid	D-Severe Effect
Cyanic Acid	D-Severe Effect
Cyclohexane	A <sup>1</sup> -Excellent
Cyclohexanone	A-Excellent
Detergents	A <sup>1</sup> -Excellent
Dichloroethane	A <sup>1</sup> -Excellent
Diesel Fuel	A-Excellent
Diethylamine	B-Good
Diethylene Glycol	A <sup>1</sup> -Excellent
Dimethyl Aniline	D-Severe Effect
Dimethyl Formamide	D-Severe Effect
Diphenyl Oxide	D-Severe Effect
Dyes	C-Fair
Epsom Salts (Magnesium Sulfate)	B-Good
Ethane	A <sup>1</sup> -Excellent
Ethanol	A <sup>1</sup> -Excellent
Ethanolamine	D-Severe Effect
Ether	A <sup>1</sup> -Excellent
Ethyl Acetate	A-Excellent
Ethyl Chloride	A <sup>1</sup> -Excellent
Ethyl Ether	A <sup>1</sup> -Excellent
Ethylene Chloride	A <sup>1</sup> -Excellent
Ethylene Chlorohydrin	D-Severe Effect

Ethylene Diamine	D-Severe Effect
Ethylene Dichloride	B <sup>1</sup> -Good
Ethylene Glycol	B-Good
Ethylene Oxide	D-Severe Effect
Fatty Acids	A-Excellent
Ferric Chloride	D-Severe Effect
Ferric Nitrate	D-Severe Effect
Ferric Sulfate	D-Severe Effect
Ferrous Chloride	D-Severe Effect
Ferrous Sulfate	D-Severe Effect
Fluoboric Acid	A <sup>1</sup> -Excellent
Fluorine	D-Severe Effect
Fluosilicic Acid	A <sup>1</sup> -Excellent
Formaldehyde 100%	A-Excellent
Formaldehyde 40%	A <sup>2</sup> -Excellent
Formic Acid	A <sup>2</sup> -Excellent
Freon 113	A-Excellent
Freon 12	B-Good
Freon 22	A-Excellent
Freon TF	A-Excellent
Freonr 11	D-Severe Effect
Fruit Juice	D-Severe Effect
Fuel Oils	A-Excellent
Furan Resin	D-Severe Effect
Furfural	A-Excellent
Gasoline (high-aromatic)	B-Good
Gasoline, leaded, ref.	A-Excellent
Gasoline, unleaded	A-Excellent
Gelatin	B-Good
Glucose	A-Excellent
Glue, P.V.A.	A-Excellent
Glycerin	A-Excellent
Glycolic Acid	A-Excellent
Gold Monocyanide	A-Excellent
Grape Juice	A-Excellent
Grease	D-Severe Effect
Heptane	A-Excellent
Hexane	A-Excellent
Honey	A-Excellent
Hydraulic Oil (Petro)	B-Good
Hydrazine	B-Good

Hydrobromic Acid 100%	D-Severe Effect
Hydrobromic Acid 20%	C-Fair
Hydrochloric Acid 100%	C-Fair
Hydrochloric Acid 20%	C-Fair
Hydrochloric Acid 37%	C-Fair
Hydrocyanic Acid	B-Good
Hydrocyanic Acid (Gas 10%)	C-Fair
Hydrofluoric Acid 100%	D-Severe Effect
Hydrofluoric Acid 20%	D-Severe Effect
Hydrofluoric Acid 50%	D-Severe Effect
Hydrofluoric Acid 75%	D-Severe Effect
Hydrofluosilicic Acid 100%	A-Excellent
Hydrofluosilicic Acid 20%	B-Good
Hydrogen Peroxide 10%	D-Severe Effect
Hydrogen Peroxide 100%	D-Severe Effect
Hydrogen Peroxide 30%	D-Severe Effect
Hydrogen Peroxide 50%	D-Severe Effect
Hydrogen Sulfide (aqua)	C-Fair
Hydroquinone	A-Excellent
Hydroxyacetic Acid 70%	A-Excellent
Ink	B-Good
Iodine	D-Severe Effect
Iodine (in alcohol)	D-Severe Effect
Isopropyl Acetate	D-Severe Effect
Isopropyl Ether	D-Severe Effect
Jet Fuel (JP3, JP4, JP5)	A <sup>1</sup> -Excellent
Kerosene	A <sup>2</sup> -Excellent
Ketones	D-Severe Effect
Lacquer Thinners	D-Severe Effect
Lacquers	D-Severe Effect
Lactic Acid	B-Good
Lard	A-Excellent
Latex	B-Good
Lead Acetate	B-Good
Lead Sulfamate	A-Excellent
Ligroin	B-Good
Lime	B-Good
Linoleic Acid	B-Good
Lithium Chloride	A-Excellent
Lubricants	A-Excellent
Lye: Ca(OH) <sub>2</sub> Calcium Hydroxide	D-Severe Effect

Lye: KOH Potassium Hydroxide	A-Excellent
Lye: NaOH Sodium Hydroxide	C-Fair
Magnesium Carbonate	A-Excellent
Magnesium Chloride	B <sup>1</sup> -Good
Magnesium Hydroxide	A-Excellent
Magnesium Nitrate	A-Excellent
Magnesium Oxide	A-Excellent
Magnesium Sulfate (Epsom Salts)	B-Good
Maleic Acid	A-Excellent
Maleic Anhydride	D-Severe Effect
Malic Acid	A-Excellent
Manganese Sulfate	A <sup>1</sup> -Excellent
Mash	A-Excellent
Mayonnaise	A-Excellent
Melamine	A-Excellent
Mercuric Chloride (dilute)	B-Good
Mercury	A-Excellent
Methane	A-Excellent
Methanol (Methyl Alcohol)	A-Excellent
Methyl Acetate	B-Good
Methyl Acetone	D-Severe Effect
Methyl Acrylate	B-Good
Methyl Alcohol 10%	A-Excellent
Methyl Bromide	D-Severe Effect
Methyl Butyl Ketone	D-Severe Effect
Methyl Cellosolve	D-Severe Effect
Methyl Chloride	B-Good
Methyl Dichloride	D-Severe Effect
Methyl Ethyl Ketone	C-Fair
Methyl Methacrylate	D-Severe Effect
Methylamine	D-Severe Effect
Methylene Chloride	B-Good
Milk	A-Excellent
Mineral Spirits	A-Excellent
Molasses	A-Excellent
Monochloroacetic acid	D-Severe Effect
Monoethanolamine	D-Severe Effect
Motor oil	B-Good
Mustard	C-Fair
Naphtha	A <sup>1</sup> -Excellent
Naphthalene	A <sup>1</sup> -Excellent

Natural Gas	B-Good
Nickel Chloride	A-Excellent
Nickel Sulfate	A-Excellent
Nitrating Acid (>15% H <sub>2</sub> SO <sub>4</sub> )	D-Severe Effect
Nitric Acid (20%)	D-Severe Effect
Nitric Acid (50%)	D-Severe Effect
Nitric Acid (5-10%)	D-Severe Effect
Nitric Acid (Concentrated)	D-Severe Effect
Nitrobenzene	C-Fair
Nitromethane	A-Excellent
Oils: Aniline	D-Severe Effect
Oils: Anise	D-Severe Effect
Oils: Bay	D-Severe Effect
Oils: Bone	D-Severe Effect
Oils: Castor	A-Excellent
Oils: Cinnamon	D-Severe Effect
Oils: Citric	A-Excellent
Oils: Coconut	A-Excellent
Oils: Cod Liver	B-Good
Oils: Corn	A-Excellent
Oils: Cottonseed	A-Excellent
Oils: Creosote	D-Severe Effect
Oils: Diesel Fuel (20, 30, 40, 50)	D-Severe Effect
Oils: Fuel (1, 2, 3, 5A, 5B, 6)	D-Severe Effect
Oils: Ginger	A-Excellent
Oils: Hydraulic Oil (Petro)	B-Good
Oils: Lemon	D-Severe Effect
Oils: Linseed	A-Excellent
Oils: Mineral	A-Excellent
Oils: Olive	A-Excellent
Oils: Orange	D-Severe Effect
Oils: Palm	A-Excellent
Oils: Peanut	A-Excellent
Oils: Peppermint	D-Severe Effect
Oils: Pine	A-Excellent
Oils: Rapeseed	A-Excellent
Oils: Sesame Seed	D-Severe Effect
Oils: Silicone	A-Excellent
Oils: Soybean	A-Excellent
Oils: Sperm (whale)	D-Severe Effect
Oils: Tanning	D-Severe Effect

Oils: Transformer	A-Excellent
Oils: Turbine	A-Excellent
Oleic Acid	A-Excellent
Oleum 100%	D-Severe Effect
Oleum 25%	D-Severe Effect
Oxalic Acid (cold)	B-Good
Ozone	C-Fair
Palmitic Acid	A-Excellent
Paraffin	A-Excellent
Pentane	B-Good
Perchloric Acid	C-Fair
Perchloroethylene	B-Good
Petrolatum	B-Good
Petroleum	B-Good
Phenol (10%)	B-Good
Phenol (Carbolic Acid)	D-Severe Effect
Phosphoric Acid (>40%)	D-Severe Effect
Phosphoric Acid (crude)	D-Severe Effect
Phosphoric Acid (molten)	D-Severe Effect
Phosphoric Acid (S40%)	D-Severe Effect
Phosphoric Acid Anhydride	D-Severe Effect
Phosphorus	B-Good
Phosphorus Trichloride	D-Severe Effect
Photographic Developer	D-Severe Effect
Photographic Solutions	D-Severe Effect
Phthalic Acid	C-Fair
Phthalic Anhydride	C-Fair
Picric Acid	A-Excellent
Plating Solutions, Antimony Plating 130°F	A-Excellent
Plating Solutions, Arsenic Plating 110°F	A-Excellent
Plating Solutions (Brass): High-Speed Brass Bath 110°F	A-Excellent
Plating Solutions (Brass): Regular Brass Bath 100°F	A-Excellent
Plating Solutions (Bronze): Cu-Cd Bronze Bath R.T.	A-Excellent
Plating Solutions (Bronze): Cu-Sn Bronze Bath 160°F	B-Good
Plating Solutions (Bronze): Cu-Zn Bronze Bath 100°F	A-Excellent
Plating Solutions (Cadmium): Cyanide Bath 90°F	A-Excellent
Plating Solutions (Cadmium): Fluoborate Bath 100°F	C-Fair
Plating Solutions, (Chromium): Barrel Chrome Bath 95°F	D-Severe Effect
Plating Solutions, (Chromium): Black Chrome Bath 115°F	D-Severe Effect
Plating Solutions, (Chromium): Chromic-Sulfuric Bath 130°F	D-Severe Effect
Plating Solutions, (Chromium): Fluoride Bath 130°F	D-Severe Effect

Plating Solutions, (Chromium): Fluosilicate Bath 95°F	D-Severe Effect
Plating Solutions (Copper) (Acid): Copper Fluoborate Bath 120°F	C-Fair
Plating Solutions (Copper) (Acid): Copper Sulfate Bath R.T.	A-Excellent
Plating Solutions (Copper) (Cyanide): Copper Strike Bath 120°F	A-Excellent
Plating Solutions (Copper) (Cyanide): High-Speed Bath 180°F	B-Good
Plating Solutions (Copper) (Cyanide): Rochelle Salt Bath 150°F	B-Good
Plating Solutions (Copper) (Misc): Copper (Electroless)	D-Severe Effect
Plating Solutions, Copper Plating (Misc): Copper Pyrophosphate	A-Excellent
Potash (Potassium Carbonate)	B-Good
Potassium Bicarbonate	C-Fair
Potassium Bromide	A-Excellent
Potassium Chlorate	B-Good
Potassium Chloride	A-Excellent
Potassium Chromate	C-Fair
Potassium Cyanide Solutions	C-Fair
Potassium Dichromate	A-Excellent
Potassium Ferricyanide	B <sup>1</sup> -Good
Potassium Hydroxide (Caustic Potash)	A-Excellent
Potassium Nitrate	A-Excellent
Potassium Permanganate	A-Excellent
Potassium Sulfate	B-Good
Propane (liquefied)	A-Excellent
Propylene Glycol	B-Good
Pyridine	B-Good
Pyrogallic Acid	D-Severe Effect
Rosins	B-Good
Rum	A-Excellent
Rust Inhibitors	A-Excellent
Salad Dressings	A-Excellent
Salicylic Acid	D-Severe Effect
Sea Water	A-Excellent
Shellac (Bleached)	A-Excellent
Shellac (Orange)	A-Excellent
Silicone	A-Excellent
Silver Bromide	C-Fair
Silver Nitrate	A-Excellent
Soap Solutions	A-Excellent
Soda Ash (see Sodium Carbonate)	A-Excellent
Sodium Acetate	B-Good
Sodium Aluminate	B-Good
Sodium Bicarbonate	A-Excellent

Sodium Bisulfate	B-Good
Sodium Bisulfite	C-Fair
Sodium Bromide	A-Excellent
Sodium Carbonate	A <sup>1</sup> -Excellent
Sodium Chlorate	A-Excellent
Sodium Chloride	A <sup>1</sup> -Excellent
Sodium Chromate	D-Severe Effect
Sodium Cyanide	A-Excellent
Sodium Ferrocyanide	A-Excellent
Sodium Hydroxide (20%)	A-Excellent
Sodium Hydroxide (50%)	A-Excellent
Sodium Hydroxide (80%)	D-Severe Effect
Sodium Hypochlorite (<20%)	D-Severe Effect
Sodium Hypochlorite (100%)	D-Severe Effect
Sodium Metaphosphate	B-Good
Sodium Metasilicate	D-Severe Effect
Sodium Nitrate	A-Excellent
Sodium Perborate	B-Good
Sodium Peroxide	D-Severe Effect
Sodium Polyphosphate	B-Good
Sodium Silicate	C-Fair
Sodium Sulfate	B-Good
Sodium Sulfide	B-Good
Sodium Tetraborate	B-Good
Sodium Thiosulfate (hypo)	C <sup>1</sup> -Fair
Sorghum	A-Excellent
Soy Sauce	A-Excellent
Stannic Chloride	C-Fair
Stannic Fluoborate	C-Fair
Starch	A-Excellent
Stearic Acid	A-Excellent
Stoddard Solvent	A-Excellent
Styrene	A-Excellent
Sugar (Liquids)	A-Excellent
Sulfate (Liquors)	D-Severe Effect
Sulfur Chloride	D-Severe Effect
Sulfur Dioxide	B-Good
Sulfur Dioxide (dry)	B-Good
Sulfur Trioxide (dry)	D-Severe Effect
Sulfuric Acid (<10%)	D-Severe Effect
Sulfuric Acid (10-75%)	D-Severe Effect

Sulfurous Acid	C-Fair
Sulfuryl Chloride	A-Excellent
Tallow	A-Excellent
Tannic Acid	B-Good
Tanning Liquors	B-Good
Tartaric Acid	B-Good
Tetrachloroethane	A-Excellent
Tetrachloroethylene	A-Excellent
Tetrahydrofuran	A-Excellent
Toluene (Toluol)	C <sup>1</sup> -Fair
Tomato Juice	B-Good
Trichloroethane	A-Excellent
Trichloroethylene	D-Severe Effect
Trichloropropane	A-Excellent
Tricresylphosphate	C-Fair
Triethylamine	D-Severe Effect
Trisodium Phosphate	A-Excellent
Turpentine	A <sup>2</sup> -Excellent
Urea	A-Excellent
Urine	A-Excellent
Varnish	A-Excellent
Vegetable Juice	A-Excellent
Vinegar	B-Good
Water, Acid, Mine	A <sup>1</sup> -Excellent
Water, Distilled	B-Good
Water, Fresh	A <sup>2</sup> -Excellent
Water, Salt	A-Excellent
Weed Killers	A-Excellent
Whey	A-Excellent
Whiskey & Wines	A-Excellent
White Liquor (Pulp Mill)	D-Severe Effect
White Water (Paper Mill)	B-Good
Xylene	A-Excellent
Zinc Chloride	C-Fair
Zinc Hydrosulfite	C-Fair
Zinc Sulfate	C-Fair

### Explanation of Footnotes

1. Satisfactory to 72°F (22°C)
2. Satisfactory to 120°F (48°C)

### Ratings: Chemical Effect

A = Excellent.

B = Good, Minor Effect, slight corrosion or discoloration

C = Fair, Moderate Effect, not recommended for continuous use. Softening, loss of strength, or swelling may occur.

D = Severe Effect, not recommended for ANY use.

**CAUTION:** Variations in chemical behavior during handling due to factors such as temperature, pressure, and concentrations can cause equipment to fail, even though it passed an initial test.

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**Please note** that these charts are for general reference only. We have aggregated this data from dozens of original sources and any single piece of data cannot be guaranteed. Additionally, many factors affect the chemical resistance of a given plastic product including the concentration/purity of the chemical, working temperature, wall thickness and condition of the container, etc. It is **your responsibility** to test a container and chemical together ensure compatibility under your unique circumstances.

Visit [www.cplabsafety.com/chemical-compatibility-charts](http://www.cplabsafety.com/chemical-compatibility-charts) for up to date information.